EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 02087675
PUBLICATION DATE : 28-03-90 ✓

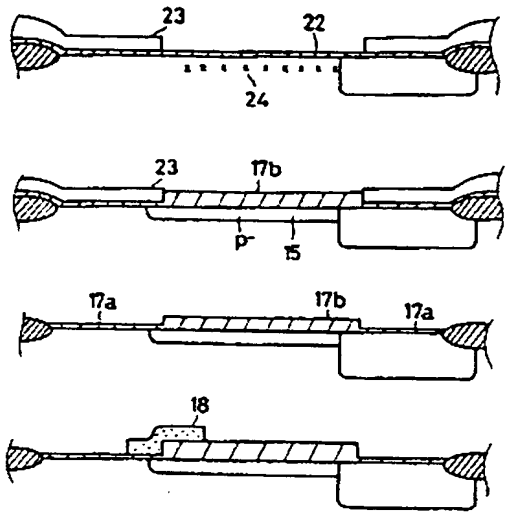
APPLICATION DATE : 26-09-88
APPLICATION NUMBER : 63241291

APPLICANT : RICOH CO LTD;

INVENTOR : YAIDA OSAMU;

INT.CL. : H01L 29/784

TITLE : HIGH BREAKDOWN STRENGTH MOS TRANSISTOR AND MANUFACTURE THEREOF



ABSTRACT : PURPOSE: To relieve the intensity of electric field applied to a gate edge by making a gate oxide film between source and drain electrodes thick on a low concentrated diffusion region and forming a gate electrode so that it extends from a thin region to a thick region of the gate oxide film.

CONSTITUTION: After forming a buffer SiO_2 film 22, a silicon nitride film 23 is deposited and patterning is performed so that an opening is made at a region in which a low concentrated diffusion region is formed by photolithography and etching. Ion implantation of phosphorus or arsenic 24 is performed at a low concentration by using a patterned silicon nitride film 23 as a mask. Further, selective oxidation is performed and the gate oxide film 17b having a thick film is formed to the thickness of the order of 1000Å. Then, implanted ions become active and the low concentrated diffusion region 15 is formed. After removing the silicon nitride film 23 and the buffer SiO_2 film 22 located below the film 23, a thin gate oxide film 17a is formed to the thickness of the order of 500Å. A polysilicon layer is deposited and then, a gate electrode 18 is formed by patterning the above layer by photolithography and etching.